

"TRADER" SERVICE SHEET
852

provides D.C. potential which is used for A.V.C. purposes.

Resistance-capacitance coupling by R10, C22 and R13 between V3 triode and pentode output valve (V4, Mazda PEN 25). Fixed tone correction in anode circuit by C23.

Grid bias potentials for all valves, and A.V.C. delay voltage, are obtained from the drop across R14, R15 in the H.T. negative lead to chassis. H.T. circuit R.F. filtering by C7.

COMPONENTS AND VALUES

CAPACITORS		Values (μF)	Location
C1	L.W. fixed trim ...	0-000065	H3
C2	V1 pent. C.G. ...	0-0001	B1
C3	1st I.F. transformer tuning ...	0-000065	A2
C4	... tuning ...	0-000065	A2
C5	V1 osc. C.G. ...	0-0002	G4
C6	A.V.C. decoupling ...	0-1	H4
C7	H.T. R.F. by-pass ...	0-1	F4
C8	S.W.2 tracker ...	0-005	F3
C9	S.W.1 tracker ...	0-00148	G3
C10	M.W. tracker ...	0-000645	E3
C11	L.W. tracker ...	0-00025	E4
C12	L.W. fixed trim ...	0-00012	E3
C13	Osc. anode coup. ...	0-0001	G4
C14	V1, V2 S.G.'s decoup. ...	0-1	G4
C15	2nd I.F. transformer tuning ...	0-000065	C2
C16	... tuning ...	0-000075	C2
C17	I.F. by-passes ...	9-0002	F4
C18	... by-passes ...	0-0002	F4
C19	A.F. coupling ...	0-01	G4
C20*	V3 G.B. decoup. ...	25-0	E4
C21	A.V.C. coupling ...	0-0001	F4
C22	A.F. coupling ...	0-01	E4
C23	Tone corrector ...	0-005	E4
C24*	H.T. reservoir ...	2-0	G4
C25†	Aerial S.W.2 trim. ...	0-00004	G3
C26†	Aerial S.W.1 trim. ...	0-00004	H3
C27†	Aerial M.W. trim. ...	0-00004	H3
C28†	Aerial L.W. trim. ...	0-00004	H3
C29†	Aerial tuning ...	0-000532§	B1
C30†	Osc. S.W.2 trim. ...	0-00004	F3
C31†	Osc. S.W.1 trim. ...	0-00004	E3
C32†	Osc. M.W. trim. ...	0-00004	E3
C33†	Osc. L.W. trim. ...	0-00004	E3
C34†	Oscillator tuning ...	0-000532§	B1

RESISTORS		Values (ohms)	Location
R1	Aerial, series ...	47,000	H4
R2	V1 pent. C.G. ...	1,000,000	B1
R3	V1 osc. C.G. ...	47,000	G4
R4	Osc. H.T. feed ...	10,000	H4
R5	S.G.'s H.T. feed ...	68,000	G4
R6	A.V.C. decoupling ...	470,000	F4
R7	Sig. diode load ...	470,000	F4
R8	I.F. stopper ...	47,000	F4
R9	Volume control ...	1,000,000	E3
R10	V3 triode load ...	100,000	F4
R11	V3 G.B. decoup. ...	1,000,000	E3
R12	A.V.C. diode load ...	1,000,000	F4
R13	V4 C.G. resistor ...	1,000,000	E4
R14	Fixed G.B. and ...	120	E4
R15	A.V.C. delay ...	180	E4

OTHER COMPONENTS		Approx. Values (ohms)	Location
L1	Aerial coupling coils	0-1	G3
L2		0-15	H3
L3		0-4	H3
L4		80-0	H4
L5	Aerial tuning coils	Very low	G3
L6		0-4	H3
L7		1-8	H3
L8		7-5	H4
L9	Oscillator reaction coils	0-1	F3
L10		0-2	F3
L11		1-0	E3
L12		2-7	E3
L13	Oscillator tuning coils	Very low	F3
L14		0-4	F3
L15		1-4	E3
L16		3-0	E3
L17	1st I.F. Pri. trans.	8-0	A2
L18		8-0	A2
L19	2nd I.F. Pri. trans.	8-0	C2
L20		8-0	C2
E21	Speech coil	3-0	---
T1	Speaker trans.	675-0	---
S1-S32	Waveband switches	---	F3
S33	Battery switches, ganged R9	---	E3
S34		---	E3

FOUR wavebands are provided on the Vidor 361, including two S.W. bands of 13.5-50 m (S.W.2) and 50-180 m (S.W.1). The receiver is a 4-valve, 4-band battery superhet. An export version, model 365, except for the scale markings, is similar in every respect. Release date and original price: October, 1947; £16 5s plus purchase tax, without batteries.

CIRCUIT DESCRIPTION

Direct aerial input from socket A1, or via attenuating resistor R1 from socket A2, to coupling coils L1 (S.W.2), L2 (S.W.1), L3 (M.W.) and L4 (L.W.) and single-tuned circuits L5, C29 (S.W.2), L6, C29 (S.W.1), L7, C29 (M.W.) and L8, C29 (L.W.) which precede triode-pentode valve (V1, Mazda metallized TP25) operating as frequency changer with internal coupling.

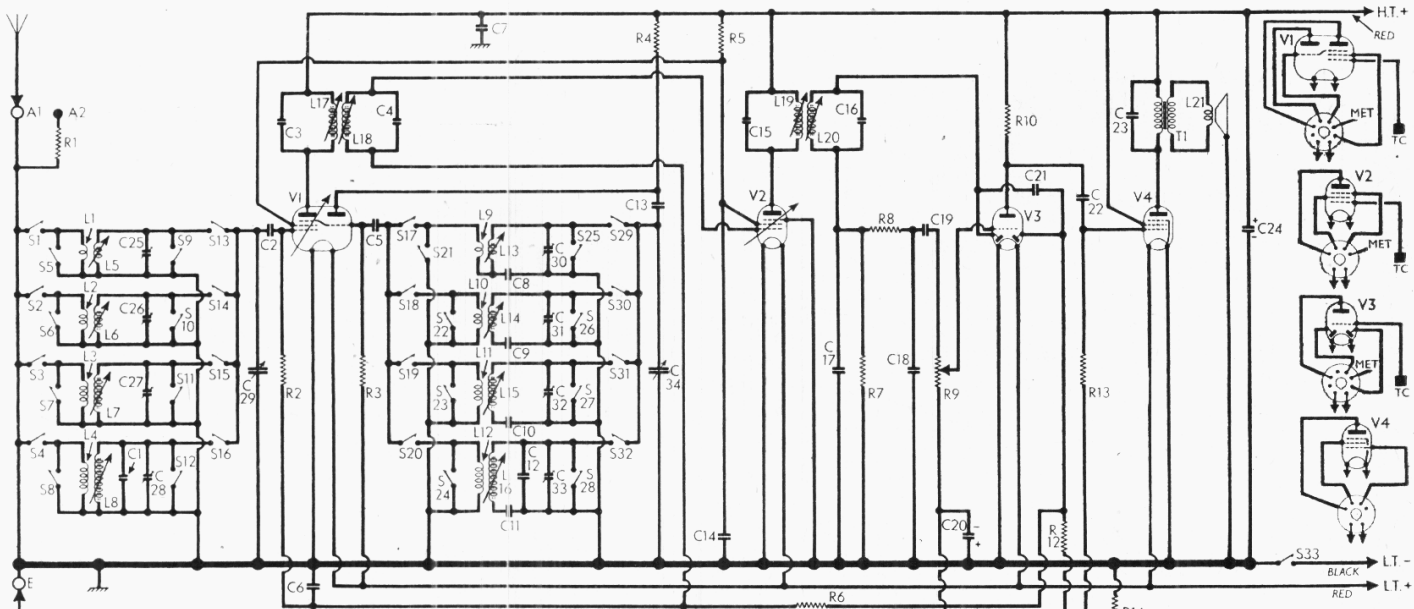
Triode oscillator anode coils L13 (S.W.2), L14 (S.W.1), L15 (M.W.) and L16 (L.W.) are tuned by C34. Parallel trimming by C30 (S.W.2), C31 (S.W.1), C32 (M.W.) and C12, C33 (L.W.); series tracking by C8 (S.W.2), C9 (S.W.1), C10 (M.W.) and C11 (L.W.). Inductive reaction coupling to grid on all bands.

Second valve (V2, Mazda metallized VP23) is a variable-μ R.F. pentode operating as intermediate frequency amplifier with tuned transformer couplings.

Intermediate frequency 456 kc/s.

Diode second detector is part of double diode triode valve (V3, Mazda metallized HL23DD). Audio frequency component in rectified output

* Electrolytic. † Variable. ‡ Pre-set. § "Swing" value, min. to max.



is developed across load resistor R7 and passed via I.F. filter C17, R8, C18, A.F. coupling capacitor C19, and manual volume control R9, to grid of triode section, which operates as A.F. amplifier. Second diode of V3, fed from L20 via C21,

Circuit diagram of the Vidor 361 4-band battery superhet. The highest-frequency S.W. band is referred to as S.W.2, and the lower one as S.W.1.

VALVE ANALYSIS

Valve voltages and currents given in the table below are those measured in our receiver, using an H.T. battery reading 117 V on load, on a model 7 Avometer whose negative lead was connected to chassis.

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 TP25	112	0.5	48	0.8
V2 VP23	82	2.5		
V3	112	0.8	48	0.15
HL23DD	60	0.6	—	—
V4 PEN25	108	4.8	112	1.3

DISMANTLING THE SET

Removing Chassis.—Remove the four control knobs (recessed grub screws); remove the four cheese-head screws (with metal washers) securing the chassis to the base of the cabinet.

To free chassis entirely, unsolder the black lead from a tag beneath the upper right-hand speaker fixing nuts, and the two leads from the speaker input transformer.

When replacing, reconnect the red and blue leads to tags on the speaker transformer, and the black lead to the earthing tag on the speaker chassis.

Removing Speaker.—Remove the two nuts, washer, and clamp, from each of the four bolts securing speaker to sub-baffle and lift out speaker.

When replacing, the connecting panel should be at the top.

CIRCUIT ALIGNMENT

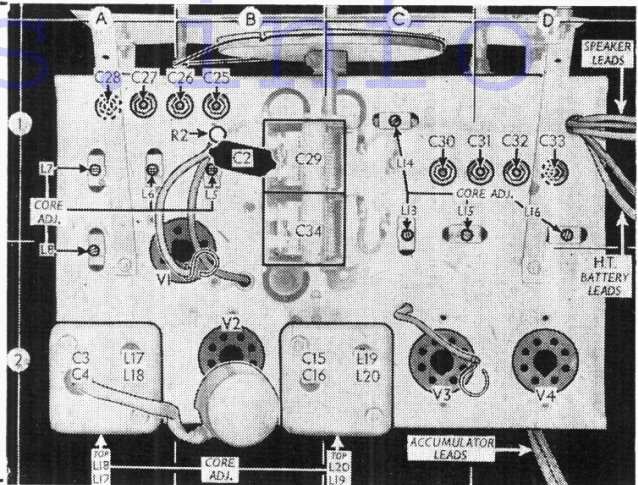
I.F. Stages.—Connect signal generator, via an 0.1 μ F capacitor, to control grid (top cap) of V1 and chassis. Switch set to L.W., tune to 2,000 m on scale, short-circuit C34 (rear section of gang), and feed in a 456 kc/s (657.8 m) signal. Adjust the cores of L20, L19, L18 and L17 (location references C2, A2), in that order, for maximum output.

R.F. and Oscillator Stages.—With the gang at maximum capacitance the pointer should be horizontal. Transfer "live" signal generator lead to A1 socket, via a suitable dummy aerial.

S.W.2.—Switch set to S.W.2, tune to 15 m on scale, feed in a 15 m (20 Mc/s) signal, and adjust C30 (C1) and C25 (B1) for maximum output. Tune to 50 m on scale, feed in a 50 m (6 Mc/s) signal, and adjust the cores of L13 (C1) and L5 (B1) for maximum output.

S.W.1.—Switch set to S.W.1, tune to 50 m on scale, feed in a 50 m (6 Mc/s) signal, and adjust C31 (D1) and C26 (B1) for maximum

Plan view of the chassis, with various alignment adjustments indicated through holes in the chassis deck. The tuning drive is extremely simple, and no instructions are necessary for its replacement.



output. Tune to 180 m on scale, feed in a 180 m (1.66 Mc/s) signal, and adjust the cores of L14 (C1) and L6 (A1) for maximum output.

M.W.—Switch set to M.W., tune to 200 m on scale, feed in a 200 m (1,500 kc/s) signal, and adjust C32 (D1) and C27 (A1) for maximum output. Tune to 550 m on scale, feed in a 550 m (545 kc/s) signal, and adjust the cores of L15 (C1) and L7 (A1) for maximum output.

L.W.—Switch set to L.W., tune to 1,000 m on scale, feed in a 1,000 m (300 kc/s) signal, and adjust C33 (D1) and C28 (A1) for maximum output. Tune to 2,000 m on scale, feed in a 2,000 m (150 kc/s) signal, and adjust the cores of L16 (D1) and L8 (A2) for maximum output.

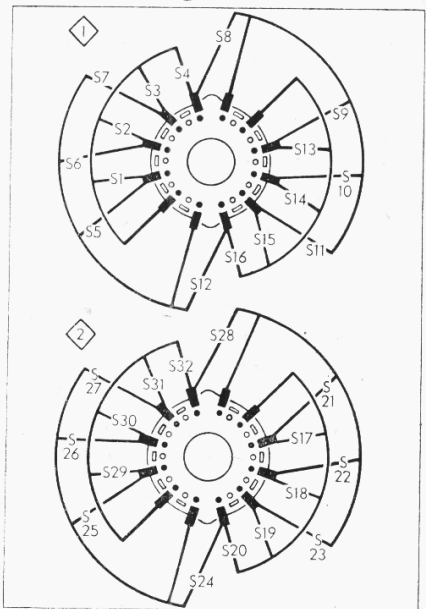
GENERAL NOTES

Switches.—S1-S32 are the waveband switches, ganged in two rotary units beneath the chassis. These are indicated in our under-chassis view and shown in detail in the diagrams in col. 3, where they are drawn as seen from the rear of an inverted chassis.

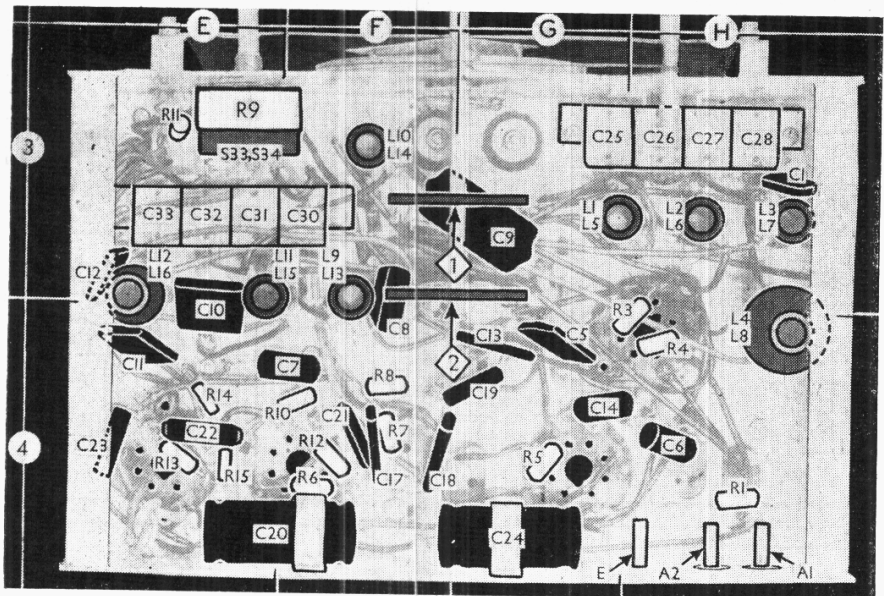
Beneath the diagrams is the table which gives the switch positions for the four control settings, starting from the fully anti-clockwise position of the control. A dash indicates open, and C closed.

Batteries.—L.T., 2 V accumulator cell; H.T., 120 V. No intermediate tappings are required, and grid bias is automatic. The lead colours are indicated in the circuit diagram. Recommended batteries are Vidor type 13961 accumulator and type 5038 H.T.

Switch Diagrams and Table



Switch	L.W.	M.W.	S.W.1	S.W.2
S1	—	—	—	—
S2	—	—	—	—
S3	—	—	—	—
S4	—	—	—	—
S5	—	—	—	—
S6	—	—	—	—
S7	—	—	—	—
S8	—	—	—	—
S9	—	—	—	—
S10	—	—	—	—
S11	—	—	—	—
S12	—	—	—	—
S13	—	—	—	—
S14	—	—	—	—
S15	—	—	—	—
S16	—	—	—	—
S17	—	—	—	—
S18	—	—	—	—
S19	—	—	—	—
S20	—	—	—	—
S21	—	—	—	—
S22	—	—	—	—
S23	—	—	—	—
S24	—	—	—	—
S25	—	—	—	—
S26	—	—	—	—
S27	—	—	—	—
S28	—	—	—	—
S29	—	—	—	—
S30	—	—	—	—
S31	—	—	—	—
S32	—	—	—	—



Under-chassis view. Diagrams of the waveband switch units are given in col. 3.